

PERFORMANCE IMPROVEMENT IN ROAD MAINTENANCE THROUGH ROADWORKER EMPOWERMENT AND SMME DEVELOPMENT IN THE FREE STATE

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ABSTRACT

The policy of the Department is to promote and establish SMME's on the one hand and on the other to provide a better and more comprehensive service to the people. This can only be done if alternative delivery mechanisms are employed and the execution arm of the Department is therefore repositioned in the private sector in the form of SMME's coming from the ranks of officials or directly from communities.

The Roadworker Empowerment Programme (REP) was initially developed to carry Roadworkers (officials) as SMME's from the public – to the private sector in five phases of development. The REP started as a pilot project in the operational field of “blading of gravel roads” during November 2001 and achieved remarkable performance improvements up to the end of February 2004.

The REP task team also had to fast track the development of SMME's in routine road maintenance when the South African National Road Agency Limited (SANRAL) offered contracts to two SMME's (from the ranks of officials) as designated Sub-Contractors under their Main Contractor for a period of two years. The REP task team prepared the two teams in two months for the venture and coached and guided them to become profitable after a few months.

The REP task team also embarked on project to develop and empower SMME's outside the Department. The two SMME's had limited practical experience but have completed a contractor training programme before they were employed to do elementary pavement maintenance work. They were taken through a coaching and grooming period of ten working days after which they were only paid for work completed. In the end they were fairly effective and efficient and managed to make a healthy profit.

1. INTRODUCTION

The Department of Public Works, Roads and Transport of the Free State Province is among other core functions also responsible for the management of the road network of the Province. The Department has experienced a declining budget and growing backlog in road maintenance over many years but always responded with performance enhancement and the fine tuning of the application of funds. In 1991 the Department embarked on the Performance Improvement Programme (PIP) in road maintenance in order to deliver a better service to its clients and also to stem the deterioration of its road infrastructure. The PIP produced its most significant productivity improvements during 1995 and the Department won a National Productivity Institute (NPI) Gold Award for its achievements during the same year. Although the PIP still achieved ongoing performance improvements every year the Department realised that it needed to start a new cycle of

performance improvements because the PIP was in fact approaching a ceiling regarding performance improvements.

The policy of the Free State Provincial Government is to establish and promote SMME's in construction and maintenance of infrastructure with the outsourcing of 80% of maintenance - and 95% of construction of infrastructure to SMME's. In addition to this the Department realised that in order to deliver a better and more comprehensive service to the people they should explore alternative delivery mechanisms through outsourcing, commercialisation and private/public partnerships. The Department concluded that the execution arm of the Department needs to be repositioned in the private sector in the form of SMME's (from the ranks of officials or directly from communities) in order to achieve the desired results. The Department developed the Roadworker Empowerment Programme (REP) specifically to carry Roadworkers (officials) as SMME's from the public – to the private sector in five phases of development as part of the SMME development policy of the Department. The Department also has a programme where SMME's are developed and empowered directly from communities as Micro Enterprises and are employed as SMME's. This paper looks at three different approaches that were undertaken to empower SMME's. The first was the normal REP processes, the other a fast track approach of the REP and the last one was an initiative to employ two SMME's directly from a community training programme.

2. THE REP AND BLADING SMME'S

The REP is a programme of the commercialisation plan of the Department called “Free State on the Move”. The main objective of the REP is to develop the road maintenance work team into an autonomous SMME and Affirmative Business Enterprise (ABE). The Roadworker will be taken through a process of empowerment in five phases of training and development and will have to master the skills needed in each phase before he can be promoted to the next. The Roadworker and his team are being trained and developed to become SMME Contractors while the Management of the Department is being trained and developed to manage and lead the SMME's through all five phases. While the Management is responsible to manage the performance of the SMME's a computerised management system was developed to make performance information readily available to Managers in order to allow them to manage performance effectively. The REP is designed to carry the Roadworkers as SMME's from the public – to the private sector and at the same time enhance their performance to such an extent that they will be profitable and on the same level of performance as their counterparts in the private sector.

The Department decided to start the Roadworker Empowerment Programme (REP) in the Southern Free State Area because of the component's long standing record in this field. It started off as a pilot project on 19 November 2001 from where it will be implemented phase by phase in the rest of the Province as soon as a particular phase is running smoothly and all obstacles are removed in that phase.

The REP aims to involve all the major role players as far as possible in order to speed up implementation. All the Managers in the component were organised into one of the four Action Teams established to implement different Action Plans of the REP. A Steering Committee was also established for all the major stakeholders of the REP that meets every month in order to inform all the stakeholders of progress and new developments.

The enhancement of service delivery through empowerment of the Roadworker as a SMME is the basic objective of the REP. The REP poses an opportunity for those Roadworkers who want to further improve their livelihood but at the same time it is not a threat to anyone's job security. No one will lose his/her job through the implementation of the REP. The REP is voluntary from Phase 3 onwards and no one will be forced in any way to join the programme in the latter phases. The REP needs highly motivated people that are really committed to the REP and its processes and

cannot afford unwilling and unmotivated people. The profit earned in each phase will be the major driving force behind the Roadworkers to join the programme in its latter phases it will lure them into the next phase. In Phase 4 of the REP the officials will decide for themselves to leave the service of the Department. It will be a voluntary decision and no one will be pressurised to make such a decision. The complete REP will span over a period of 4 to 5 years.

The REP will be executed in the following phases of empowerment and development:

- Phase 1: Roadworkers and Work Teams work as officials under normal conditions and establish the principles of the Performance Improvement Programme.
- Phase 2: Roadworkers and Work Teams are rehearsing contract work and the concept of profit and loss.
- Phase 3: The Co-operative is established as a Mother Company and the Roadworkers and Work Teams are seconded to it. They are still officials of the Department that do contract work on behalf of the Co-operative while earning a profit/loss (minimum of 28 weeks).
- Phase 4: The Roadworkers and Work Team join the Co-operative or “Mother Company” permanently as a member and do contracting work on its behalf within an arranged agreement with the Department (at least 100 weeks).
- Phase 5: The SMME permanently joins the Co-operative and operates in the open market.

A Co-operative will be established as a contracting body by the Department in the private sector that will act as a “Mother Company” for the SMME’s in Phase 3 and 4 in order to improve the power of SMME’s to bargain and contract. The SMME’s will be seconded to the Co-operative in Phase 3 but will leave the employment of the Department and join the Co-operative in Phase 4. The Co-operative will act as the business arm of all its members and contract and procure on their behalf. The Department will therefore contract with the Co-operative as a legal person and not with the individual SMME’s. The Co-operative will perform the day to day business on behalf of the SMME’s so that they can do what they do best and that is to maintain roads. The Department will have a veto right in the Co-operative in order to protect its interests and assets.

The REP started off in the one field of operation called “blading of gravel roads”. The programme was launched on 19 November 2001 with a pilot group of 4 Grader SMME’s and in April 2002 another 11 SMME’s were added to the programme. The performance results that were achieved by the Productivity Improvement Programme (PIP) were taken as the basis for “tendering” for work activities. The work activities were also revised and redefined in order to make it more appropriate for the type of blading that should be done. This resulted in three types of blading operations which made blading more efficient but also more effective by improving the quality of the final product. These operations were included in a simplified bill of quantity for the SMME and it was combined with a standard costing system to form a Profit/Loss Statement for a day (see Appendix A). The SMME was trained and coached to complete the Profit/Loss Statement on his own every day in order to provide his own feedback on the performance so that he can immediately take corrective action. This is also a way to empower a SMME to get used to all the risks that a Contractor has to face from day to day. The standard costing approach was followed to level the playing field between different SMME’s but also to minimise those elements or factors that could hide the real reasons for low performance. The Profit/Loss Statement is punched into a database and the different performance indicators are calculated for any given time period as it is needed for analytical purposes. The Road Foreman will investigate the road before it is bladed and will issue a work instruction accordingly to the SMME of what type of blading is needed over each section and will approve the work on the Profit/Loss Statement before it is submitted to the Road Superintendent who will analyse the performance and provide feedback as required. The performance of the SMME is evaluated on a higher management level over periods of at least one week or longer in order to minimise the influence of travelling and the intake of diesel.

The targets set for the SMME’s were calculated using indexes in order to simplify it for the SMME

to compare the performance indicators with each other. The greatest obstacle in the programme is the condition of the plant which is old and not so well maintained over the years. The support of the plant is acceptable at this stage but it was nevertheless decided to set targets for the plant equal to the industry averages and not to compromise because of age or maintenance levels. At the end of October 2001 and at the beginning of the programme the productivity measure of plant was at a level of 78%. Personal productivity of SMME's was 82% and Plant Utilisation was at 85%. This was the true point of departure of the REP but it was decided to set standards that are equal to that of the private sector average for SMME's to aim at. This was done because SMME's needed to bring their own performance in line with that of the private sector before they could be promoted to Phase 3 of the REP where they will in fact work in the private sector.

At the end of March 2003 it was found that 10 of the 15 Grader Operators had in fact mastered Phase 2 of the REP and was ready to embark on Phase 3. At the end of February 2004 the Running Plant Productivity, Running SMME Productivity and the Running Plant Utilisation has increased respectively from 78% to 92.6%, 82% to 107.4% and 85% to 94.0%. Stated differently it means that the SMME'S have bladed 9 197 km of gravel road more that it would have done before the REP. The value of the extra work done in terms of the REP rates is R 1 772 623 which is also the benefit that came the way of the community.

Table 1. Ten SMME'S as a group achieved the following over the past 28 months.

Performance Indicator	31 October 2001 (Index or %)	Target Measure (Index or %)	29 February 2004 (Index or %)
Running SMME Productivity	82	100	107.4
Running Plant Productivity	78	100	92.6
Running Plant Utilisation	85	81	94.0
Running Profit Index	-	100	118.7
Running Income Index	-	100	102.8
Running Expense Index	-	100	100.5

The profit earned up to 29 February 2004 was R 1 255 083 in comparison with the potential profit of R 1 083 360. It means that an amount of R 171 723 was earned more than the profit that was tendered for.

The plant was however the main obstacle and could not produce on the targeted level. If the figures are closely inspected it can be seen that the plant utilisation exceeded the targeted figure of 81% by far. This means that the plant were utilised when it was available to work with and that the SMME actually utilised the down time for most of his personal resting time as well as to do the daily servicing of the plant. This explains the extraordinary high utilisation figure and the relative low plant production.

The SMME's have earned 2.8% more income than it targeted and incurred 0.5% more expenses than it should have had under the prevailing conditions. If we compare the profit that was earned per day by the SMME with the potential profit the SMME could have made, it shows that 18.7% more profit was earned than was targeted for per day. If the total profit earned was compared with the potential profit in term of monetary value it shows that the SMME's in total earned R 171 723 more than it targeted during the tender stadium. If one looks at the total picture they in fact performed very well to date.

The graph of Appendix B shows the performance of the SMME's on the three performance indicators of Running SMME Productivity, Running Plant Utilisation and Running Plant Productivity. The initial good performance with the pilot team could be attributed to the influence of Hawthorne effect of getting special attention as well as the great amount of overtime that was worked in that period. At the end of April 2002 all the other Blading SMME's joined Phase 2 of the Programme and overtime was restricted because of budget constraints. The graph shows the performance of the 10 SMME's that mastered Phase 2 and are ready to be promoted to Phase 3. In November and December 2001 the performance of the plant even went below 80% but picked up steadily over the following weeks and especially over the last months to end up on 92.6%. This is a positive trend that will hopefully carry on until 100% is exceeded by every SMME.

3. FASTTRACKING THE REP

It must be kept in mind that there are three Operational Areas in which empowerment will take place. Each of the Operational Areas will be taken from Phase 1 to Phase 5 before the REP has reached its peak in performance.

The second Operational Area started during October 2002 with one pilot team in routine road maintenance. It started off with pavement maintenance because this is where the Department spends most of its routine maintenance funds for tarred roads. The activities were tested and trial runs were made with the specifications so that appropriate production targets could be set. The whole system was ready to be implemented in April 2003 with all the routine maintenance work teams throughout the Southern Free State when the negotiations started with the South African National Road Agency Limited (SANRAL) to empower some of the Roadworkers as SMME's in routine maintenance. The REP Action Team decided to postpone the implementation of the REP with pavement maintenance teams until November 2003 so that they could focus their efforts on fast-tracking the programme and also on empowering the Roadworkers as SMME's for the work on the N8 national route. The Department placed two SMME's as Sub-contractors to the Main Contractor on the SANRAL contract for the N8 between Bloemfontein and Maseru Bridge. The SMME's were quick to grab this golden opportunity to be placed as officials directly in the private sector in order to gain experience and improve their own performance.

All the possible candidates were informed of the proposed project in a formal session and from their ranks two teams with a Roadworker were picked to act as SMME Sub-Contractors. The Roadworkers were trained in two sessions to understand the nature of their work on the N8 and what their role would be and the site arrangements that would be in force. They were also trained to understand the specifications regarding work on national roads. The differences in specifications between the Province and SANRAL were highlighted and they were introduced to the Profit/Loss Statements that would be used on the N8 for managing purposes for the Department. An open session was arranged with the Main Contractor(N8), Consulting Engineer (N8), Programme Leader (REP) and Consultant (REP) whereby the SMME's and their personnel could be informed first hand of site relations and arrangements that would be in place. The SMME's could also field any questions to any party present because the main aim of this session was to put the SMME's in the right frame of mind in order to start the project on a high note. The Department also provided a Road Foreman and Technician to manage the two SMME's through the empowerment process.

The REP allows for meaningful benchmarking to close the performance gap between the Public – and Private Sector. The SMME's tender rates were exactly that of the SANRAL Main Contractor. If the departmental SMME's could manage to make a profit on these rates, they would indeed prove that their performance compares well or is even better than their counterparts in the private sector. The performance of the SMME was measured from the onset by the SMME himself so that his feedback is immediately available for evaluation and formulation of corrective action. The SMME's have mastered Phase 2 and are ready to be promoted to Phase 3. The Department is earning an

income from the work performed by the SMME's but as soon as the SMME's join the Co-operative in Phase 4 the income will go to the Co-operative.

Table 2. The results of the SMME's up to 29 February 2004.

Section	Description	Income	Expenses
M0200	General requirements and provisions	R 12,540	R -
M1100	Pavement layers repair	R 18,742	R 18,015
M1200	Repair of potholes, edge breaks and surface failures	R 4,320	R 10,483
M2400	Cleaning of prefabricated culverts	R 118,080	R 42,767
M2500	Cleaning of concrete drains and channels	R 10,302	R 12,513
M2600	Cleaning and maintenance of existing earth channels		R 1,232
M2700	Edge Build-Up removal	R 7,982	R 8,802
M3100	Fencing	R 2,583	R 6,443
M3200	Collection and removal of debris and litter	R 77,854	R 204,656
M4100	Erection and repair of permanent road traffic signs	R 210,520	R 131,249
M4200	Road sign cleaning and removal of illegal signs	R 1,050	R 1,865
M4400	Guardrail erection and maintenance	R 281,807	R 240,521
M9100	Daywork schedule	R 42,832	R 50,125
	TOTAL	R 788,612	R 728,671

The SMME's started off by making a huge running loss that peaked on R 81 450 at the end of August 2003 but turned it around to make a profit ever since. During November 2003 the running loss has finally been turned into a running profit. These teams proved that with proper coaching and management most officials on the REP will be successful SMME's with fast tracking. Up to end of February 2004 they made a running profit of R 59 941.

4. SMME EMPOWERMENT OUTSIDE THE DEPARTMENT

The REP task team also explored the approach to develop and empower SMME's directly out of communities. A number of entrepreneurs started training in Smithfield during June 2003 as part of a Community Based Public Works Programme (CBPWP) project. They were trained in tender and other skills but also worked as labourers on a bridge site in order to apply their skills acquired through the training. Two of these trainees were placed on site as Contractors for the Department to do simple pavement maintenance work on tarred roads since 6 October 2003. These two SMME's (one is female) provide jobs for 14 people of which 6 are women.

The SMME's were taken through a coaching and grooming period of ten working days during which they were strictly paid for work completed. During the grooming period the Contractors were allowed to recover his/her costs and minimum profit if they did not make the set targets. The Contractors were coached and guided by the Road Foreman and Consultant on the practicalities on a site like handling of traffic, keeping the quality of work within specification, etc. At the end of November it could be said that they could operate fairly independent as contractors. They managed to make a healthy profit to date and the female SMME is currently the top performer of the two. The two SMME's as a team produced up to the end of February 2004 on average 226.1 m²/day. The target production rate was 200 m²/day and they exceeded it by 13.1%.

From the table it can be seen that the Me. Mohoshela is in fact maintaining a better net profit margin but is also doing better regarding net profit than Mr. Ranchobe. The reasons for this are that Me. Mohoshela negotiated a better hiring deal with her bakkie as that of Mr. Ranchobe but also produced on average more work per day than him. The expenses in the table only include the cost of hiring a bakkie, labour and fuel consumed. The Contractors will also be responsible for other costs that they might incur because of decisions they made on their own which is not reflected in the table.

Table 3. The results up to February 2004.

Output produced	M.E. Ranchobe		N.F. Mohoshela	
Turnover	R	67,683.73	R	59,967.61
Expense	R	47,513.98	R	39,536.65
Net profit	R	20,169.75	R	20,430.96
Net profit margin		29.8%		34.07%
Work produced		14330.8 m ²		15 479.4 m ²

This project is also a Public Private Partnership between the Department, the Contractor and the Consultant. The latter is providing the vehicles at a negotiated rental rate to the SMME's, project management and the operating capital to pay the SMME's for services provided. This means that the SMME is paid for his/her services the same day that he/she completes the work on a two week cycle. If this is not done in this way the SMME might go out of business because of a lack of operating capital. The Department reimburses the Consultant for the operating capital at the end of each month as well as for services rendered as a percentage of the contract amount. The Department also provides the Contractors with material and road signs and when needed with small equipment.

5. CONCLUSION

The preferred way to empower officials as SMME's is through the normal processes of the REP because it is comprehensive in its approach but also has a positive motivating effect to lure the participants from one phase to the next. This will allay the fear that Roadworkers might have to enter the private sector by proving to them that they can make a good living from the profit earned from maintaining roads. Their capacity to perform on an adequate level will be built up over time and will allow their confidence to grow.

The Department will also have to grab opportunities to empower SMME's under a Main Contractor on Departmental projects as well as SANRAL projects when the opportunity arises. The empowerment processes of the REP then need to be revised and adapted to the particular situation to make a success of the project. The intensity of the empowerment process is the main ingredient that needs to be addressed in this situation.

The Department cannot only develop SMME's from the ranks of officials. It should also parallel to the REP develop SMME's directly from communities and employ them as contractors while empowering them. The key here is to groom the contractor on elementary contracts on negotiated rates until they can competently tender for work before they are released in the open market. The two SMME's discussed in this paper are not entirely ready for this and will have to be empowered to a greater extent. They however proved the point that they can deliver work of acceptable quality within a month when placed on a site for the first time. The support and assistance from the Department should be in place and active during this period to make it a success.

6. REFERENCES

- [1] SANRAL, 2001. South African National Road Agency Limited: Standard Specifications for Routine Road Maintenance, Volume 2.
- [2] NCASA, 2002. Registering Co-operatives. National Co-operative Association of South Africa.
- [3] K. Philips, 1997. Problems facing Emergent Producer Co-ops in South Africa. Input to the Commission into Co-operatives.
- [4] FPG, 2001. The Free State Development Plan.
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CONTRACT WORK: BLADING OF GRAVEL ROADS IN THE FREE STATE

DISTRICT: _____

CONTRACTOR: _____

DATE: _____

INCOME CALCULATION

EXPENSE CALCULATION

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT	DESCRIPTION	DEP. NUMBER	UNIT	QUANTITY	RATE	AMOUNT
1	Heavy Blading of gravel roads with at least 11 (eleven) cuts over the full length of the section.	Km		R 479.00		Grader: Day cost		Day		R 819.25	
						Grader: Hour cost		Hour		R 34.21	
2	Normal blading of gravel roads with 5 (five) over the full length of the section.	Km		R 184.00		Diesel cost		Litre		R 3.69	
						Grader Unit		Day		R 45.97	
3	Light blading of gravel roads with 4 (four) cuts over the full length of the section.	Km		R 133.00		Salary: SMME		Hour		R 20.50	
						Wages Labour		Hour		R 15.00	
4	Dayworks	Hour		R 370.00		Overtime: SMME		Hour		R 26.85	
						Overtime: Labour		Hour		R 19.10	
						Camping allowance: SMME		Evening		R 64.00	
						Camping allowance: Labour		Evening		R 64.00	
Total income						Total expense					

NET PROFIT/LOSS

The information on this document was checked and correspond with the information on the work sheet, seven day planning/instruction chart, logbook and P2 document.

CONTRACTOR: DATE:/...../.....

FOREMAN: DATE:/...../.....

Address the following:

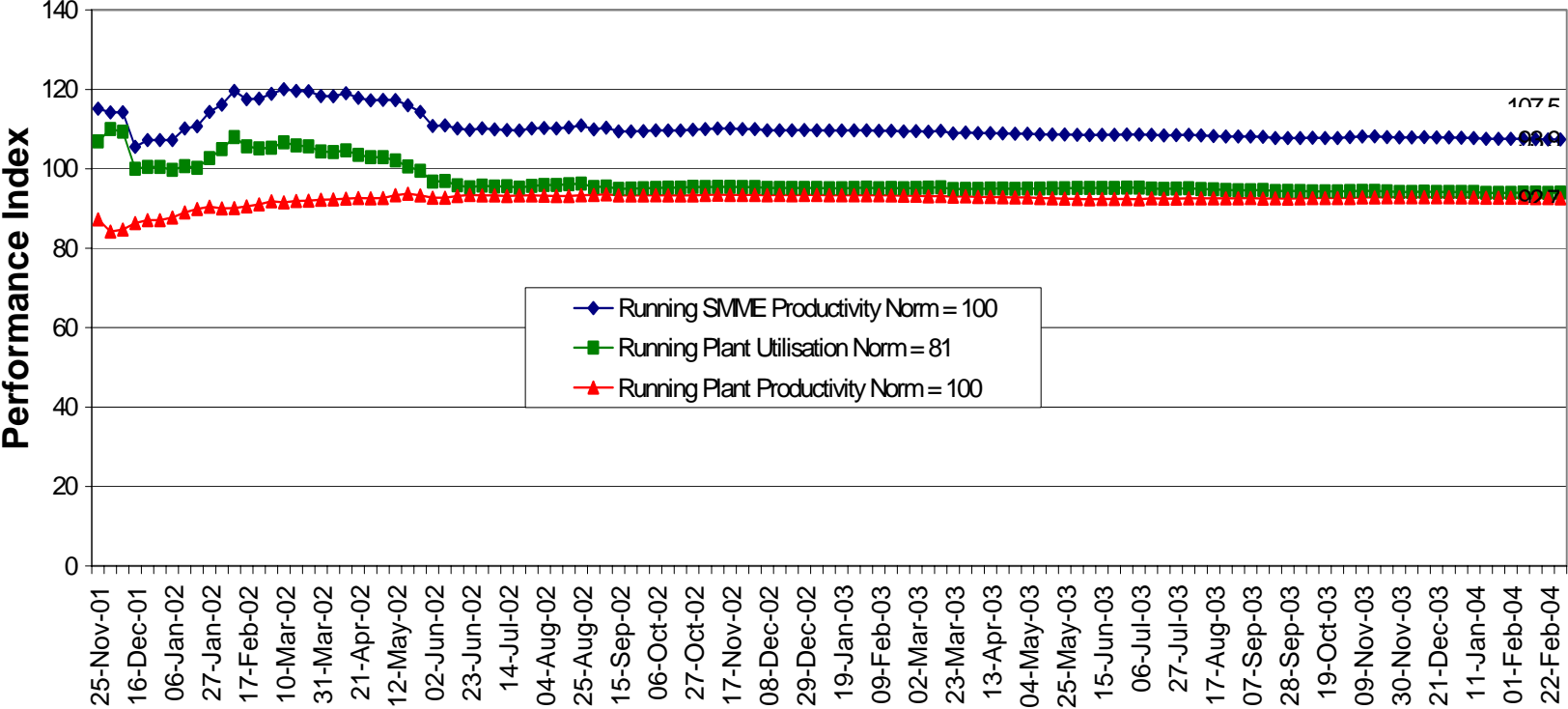
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APPENDIX A

TEN GRADER SMME'S THAT MASTERED PHASE 2: PERFORMANCE INDICATORS



PERFORMANCE IMPROVEMENT IN ROAD MAINTENANCE THROUGH ROADWORKER EMPOWERMENT AND SMME DEVELOPMENT IN THE FREE STATE

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BIOGRAPHY

Louis van Wyk was born in 1954 in Port Elizabeth and graduated with a BSc. Eng. (Civil) in 1980 from the University of Pretoria. He started his career with the Department of Transport of Namibia and worked mainly in road construction. In 1989 he joined the Cape Provincial Administration where his main duties were to liaise with Local Government and District Councils on road maintenance. He joined the Free State Department of Public Works, Roads and Transport in 1993 where his main duties were to manage the maintenance of provincial roads. He was also involved in the Productivity Improvement Programme of the Southern Free State Area which won a National Productivity Institute (NPI) Gold Award for productivity improvement in 1995. He is currently the Chief Engineer: Road Maintenance of the Motheo Region of the Department and is leading the Roadworker Empowerment Programme.

Herman Schoeman was born in Pietermaritzburg in 1957 and graduated with a B. Eng. (Civil) in 1979 from the University of Stellenbosch. He started his career with the Free State Provincial Government in 1980 and worked for 16 years in road construction and road maintenance as a manager. He gained extensive management experience and spearheaded the productivity improvement programme of the Southern Free State Area, which won a NPI Gold Award for productivity improvement in 1995. He graduated in 1988 with a B.Com and in 1994 with a MBL from Unisa. He is currently the Managing Director of Bovicon and specialises in performance – and project management. He is the Consultant that developed the Roadworker Empowerment Programme with the Department of Public Works, Roads and Transport of the Free State Province.